UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,800	08/25/2006	Naoya Amino	21713-00035-US1	2201

30678 7590 05/12/2009

CONNOLLY BOVE LODGE & HUTZ LLP
1875 EYE STREET, N.W.
SUITE 1100
WASHINGTON, DC 20006

EXAMINER	
SCOTT, ANGELA C	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
05/12/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/590,800	AMINO ET AL.	
	Examiner	Art Unit	
	Angela C. Scott	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's response of April 23, 2009 has been fully considered. No amendments have been made and claims 10-13 are pending.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (US 2003/0139523) in view of Kawakami et al. (US 4,748,168).

Regarding claim 10, Nakamura et al. teaches a rubber composition (¶85) comprising 100 parts by weight of rubber containing 50 to 90 parts by weight (¶89) of a styrene-butadiene copolymer and another diene rubber such as natural rubber or polybutadiene (¶88) and 1 to 50 parts by weight of a conjugated diene rubber gel (¶89) that is preferably a styrene-butadiene rubber (¶27-28) having a toluene swelling index of 16 to 70 (¶85).

Nakamura et al. does not teach that the glass transition temperature (Tg) of the aromatic vinyl-conjugated diene copolymer rubber is from -40° C to -5° C and that the glass transition temperature of the rubber gel satisfies the following formula:

$$TgA - 10 < TgB < TgA + 10$$

However, Kawakami et al. teaches a blend of styrene-butadiene rubbers where one rubber has a Tg of from -20° C to -40° C (Col. 2, lines 20-25) and where the Tg of the other rubber component is close to that of the first rubber component. See Col. 2, lines 35-45 where components do not blend well when they have Tg about 20 degrees apart. Additionally, Table 2 and Table 3 show a blend of two rubbers where the glass transition temperatures are about 11 degrees apart. These two pieces of evidence show that the temperatures should be close to one another for the rubbers to be compatible. Nakamura et al. and Kawakami et al. are analogous art because they are from the same field of endeavor, namely blends of styrene-butadiene rubber components. At the time of the invention, a person of ordinary skill in the art would have found it obvious to use a diene with a glass transition temperature being within ten degrees of glass transition temperature of the rubber gel, as taught by Kawakami et al., in the rubber composition,

as taught by Nakamura et al., and would have been motivated to do so in order to ensure full compatibility between the two rubber components (Col. 2, lines 32-38).

Regarding claim 11, Nakamura et al. additionally teaches a Mooney viscosity of 50 to 200 (¶82) with 105 and 122 being explicitly disclosed (Table 3).

Regarding claim 12, Nakamura et al. additionally teaches that the conjugated diene rubber gel contains 80 to 99% weight of conjugated diene monomer units, 1 to 20% by weight of aromatic vinyl monomer units, and 0% to 1.5% by weight of crosslinking monomer units (¶20) (polyfunctional vinyl monomer units) (¶37).

Regarding claim 13, Nakamura et al. additionally teaches that the rubber composition further contains 10 to 99% weight of silica and 1-90% weight of carbon black (¶99) out of 10-200 parts by weight of total filler (¶98). The carbon black has a nitrogen adsorption specific surface area of 5 m^2/g to 200 m^2/g (¶92).

Response to Arguments

Applicant's arguments filed April 23, 2009 have been fully considered but they are not persuasive.

Applicants argue that Kawakami does not explicitly teach using glass transition temperatures that are within 10 degrees of each other. While it is true that Kawakami does not *explicitly* state this fact, it is apparent from reading Kawakami as a whole that it teaches using components with somewhat close glass transition temperatures in order to have compatibility between the components. Kawakami states that it has been found that two SBRs of different styrene content, i.e., different glass transition temperatures, when blended are not fully compatible (Col. 2, lines 35-40). Additionally, when looking at the examples, in Table 2 and Table 3, the rubber components that are chosen to be blended together have glass transition temperature differences of about 11 degrees. While Applicant points out that this difference is not an absolute value of 10, it is only one degree away and therefore this reference teaches the concept of choosing components with similar glass transition temperatures.

Applicants also refer to other references, which at best, seem to contradict the teachings of Kawakami in that incompatibility is desired instead of compatibility. The question to be concerned with, however, is what would one of ordinary skill in the art learn from reading a

combination of Nakamura and Kawakami. When these two references are taken together, the invention of the instant application is deemed obvious over the prior art of record.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela C. Scott whose telephone number is (571) 270-3303. The examiner can normally be reached on Monday through Friday, 8:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1796

/A. C. S./
Examiner, Art Unit 1796